Mark M. McKinnon
Last changed 2007-Aug-31

14 SCHEDULE AND BUDGET

Revision History
2001-Nov-08: Initial release, Budget and Schedule from EVLA Management Plan, September 2001
2002-May-31: Updated budget section to be current as of Q2 2002
2003-Aug-16: Updated budget and schedule to be current as of Q3 2003
2004-Dec-04: Updated budget and schedule to be current as of Q4 2004
2006-Apr-03: Updated budget and schedule to be current as of Q1 2006
2007-Aug-31: Updated budget and schedule to be current as of July 2007

14.1 Introduction

In this chapter a brief summary of the schedule and budget information for the project is provided. This information will change as the project progresses, so readers should understand that the information provided is current as of the date identified in the Revision History above. If required, a more up-to-date or more detailed version of this information can be requested from EVLA Project Management.

14.2 Project Work Breakdown Structure (WBS)

The EVLA Project is the 6th activity within NRAO's overall WBS. The work of the EVLA is subdivided into the 12 principal Level 2 tasks shown in Table 12.1.

Table 14.1 EVLA Project WBS Level 2 tasks

WBS No.	Task Name	Task Description
6.01	Project Management	Project management including work definition, budget and schedule control. Advisory committee, design review and oversight activities.
6.02	System Integration and Testing	All system engineering activities during the design, integration, installation and test phases of the project. Management of the technical aspects of both the hardware and software systems. Provision of shared systems such as modules, racks and power supplies.
6.03	Civil Construction	Burial of the long-distance fiber optics cables along the arms of the array. Construction of a new shielded room to house the new EVLA correlator.
6.04	Antennas	Structural modifications to the VLA feed support structure on the antennas to allow installation of the new feed and receiver systems. Modifications to the vertex rooms on the antennas to allow installation of the new electronic systems.
6.05	Front End Systems	Design, construction and installation of all feeds and receivers for the eight EVLA receiver bands. Includes conversion to first IF at 8-12 GHz. Modifications to the cryogenics systems on the antennas for compatibility with the new receivers.
6.06	Local Oscillator System	Provision of a central reference oscillator system and an antenna remote local oscillator (LO) system. Provision of a "round-trip-phase" monitoring system to measure the phase of the LO at each antenna.
6.07	Fiber Optic System	Provision of all fiber optics systems including the fiber, the optical

		transmitters and the optical receivers for LO distribution, IF transmission and M/C.
6.08	Intermediate Frequency System	Provision of all frequency converters required to convert the signal from the 8-12 GHz band at the output of each receiver to the 2-4 GHz baseband input to the digitizers. Provision of the wide band and narrow band digitizers. Provision of switching equipment required to direct the desired IF into each of the digitizers.
6.09	Correlator	Construction and installation of the EVLA correlator, supplied by Canada, and NRAO interfaces.
6.10	Monitor and Control System	Provision of hardware and software for array monitor and control. Includes both the central computer system and the electronics system located in each module for interface to the M/C system.
6.11	Data Management and Computing	Provision of software and hardware for observation preparation and scheduling and for post-correlation data processing. Includes a pipeline system for rapid image formation.
6.12	Education and Public Outreach	EVLA contribution to NRAO's EPO program.

A listing of the detailed Level 3 and Level 4 tasks in the WBS is available at
http://www.nrao.edu/evla/admin/wbs/wbssumm.pdf

14.3 Project Schedule

The new EVLA equipment required for the antennas was designed and prototyped during 2002, 2003 and 2004. This prototype system began to be installed on the EVLA Test Antenna (VLA antenna 13) in Q3 of 2003, with more equipment being added over the following months as designs were completed or modified. This initial prototype system consisted of the new LO, IF, and fiber optics systems, the new feed cone, and some of the new feed/receiver designs. Old feeds and receivers were used where necessary to provide frequency coverage. Also, hardware for the new Monitor and Control (M&C) system and the new M&C software were included to allow the EVLA Test Antenna to be operated with the rest of the VLA. Using this prototype equipment, first light was recorded with the Test Antenna in October 2003, and first interferometric fringes were obtained in March, 2004. An improved prototype system was installed on the second EVLA antenna (VLA antenna 14) in late 2004, and first fringes were obtained between this antenna and the rest of the VLA (including antenna 13) in September 2004. A "production-like" electronics system, in which most of the problems found in prototyping have been fixed, was installed on Antenna 14 in January 2005. The EVLA overhaul of antennas 16 and 18 followed.

The project schedule was delayed in 2005. One reason for the delay was the need to redesign the digital transmission system (DTS). The redesign was complete in June 2005. Another reason for the delay was the decision in mid-2005 to suspend EVLA antenna overhauls in order to allow project staff to focus on outstanding design issues and testing and debugging activities. By December 2005, sufficient progress was made in these areas so that EVLA antenna overhauls resumed with the fifth EVLA antenna (VLA antenna 24).

The original project plan called for antennas to be retrofitted to the EVLA design at a rate of five antennas per year. The retrofit rate was increased to about six per year in August 2006 as a schedule recovery measure. Currently, 11 antennas are in use for routine astronomical observations and account for 35.8 percent of the total antenna hours used in observations. A 12^{th} antenna is undergoing its electronics outfitting, and the mechanical overhaul of a 13^{th} antenna will start in early September 2007. The antenna retrofit rate will continue so that the last antenna will be retrofitted by Q3 2010 as originally planned. The installation of interim receivers is generally keeping pace with the antenna retrofit rate, but new EVLA receivers will be installed at a slightly slower rate. Staffing issues and delays in the design of orthomode transducers for the receivers have prolonged the installation of the last EVLA receiver beyond the original target date of Q2 2012. The last new X-band receiver is now scheduled for installation in Q3 2012. However, interim X-band receivers will provide observing capabilities at 8.0-8.9 GHz until the last 8-12 GHz receiver is installed.

The civil construction WBS element was basically completed in May 2007 with the installation of the new correlator's -48 VDC power plant in the new shielded room and an uninterruptible power supply in the EVLA operations area. The shielded room was completed in December 2006.

The correlator is being designed and built at the Herzberg Institute of Astrophysics in Canada and will be installed in the new correlator room in the VLA control building. Recent progress on the correlator has been good with problems with the fabrication of printed circuit boards and testing of the correlator chip being resolved. A 10-station prototype correlator, which is actually a subset of the final correlator, will be delivered to the VLA site in Q3 2008 for on-the-sky acceptance tests, which will be followed by integration and testing of EVLA M&C software for the correlator. The installation of the final correlator is scheduled to begin in Q2 2009 with completion in Q2 2010. First science with a subset of the correlator may commence as early as Q4 2009.

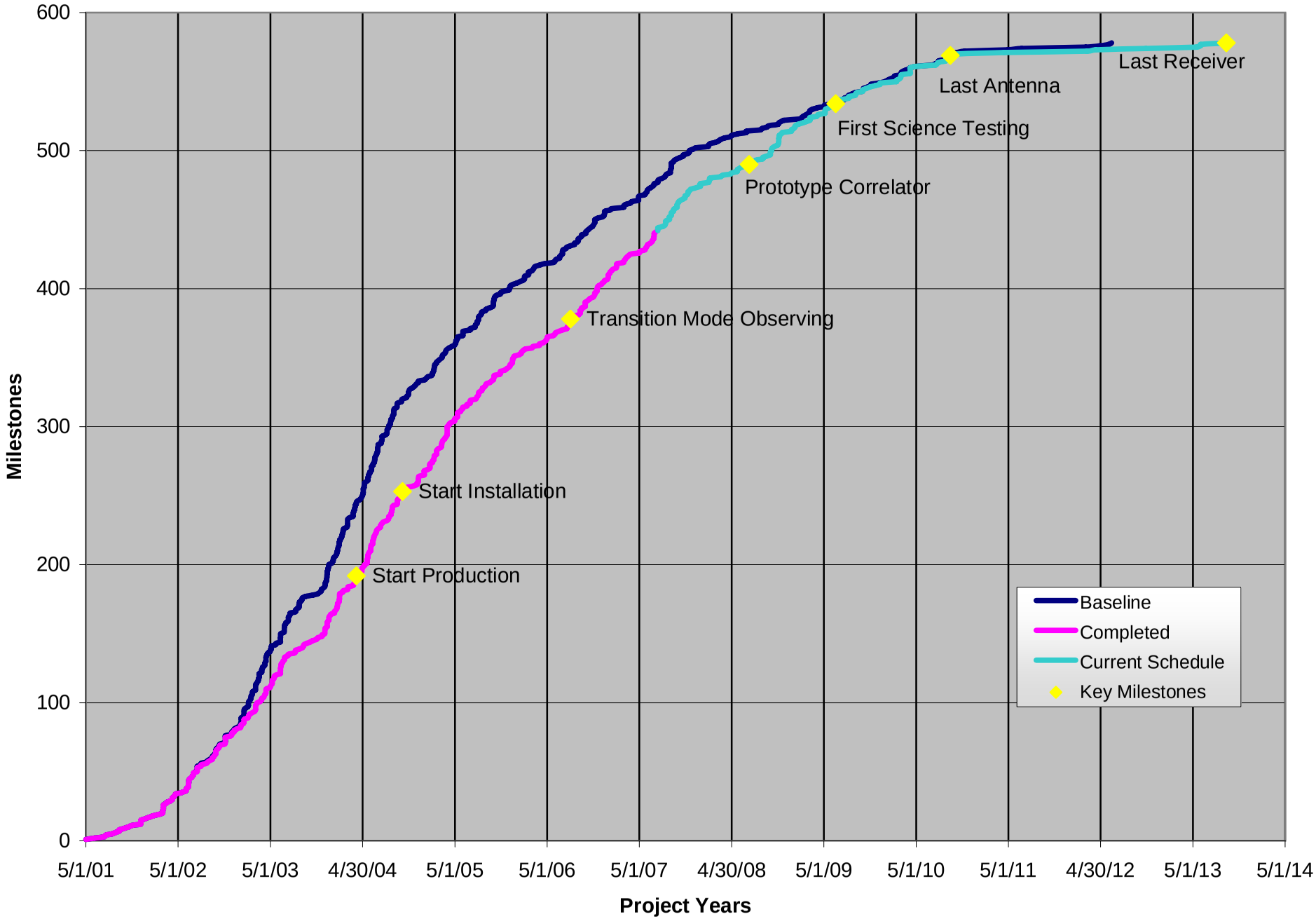
A significant milestone for the project was achieved on June 27, 2007 when the old ModComp control computers were retired from service. The completion of this milestone required the replacement of an entire suite of M&C software, the development of a new correlator controller so that the new EVLA M&C system could control the old correlator, and the development of hardware and software for a "visibility pipeline" that allows the EVLA M&C system to write correlator data to an archive. The achievement of this milestone will reduce future operations costs and will allow M&C staff to concentrate on the upcoming integration of the prototype correlator.

Additional software for the new M&C system will continue to be developed to the various phases of hardware delivery described above. This includes continued support for VLA observations using transition hardware, tests of the prototype correlator in Q3 2008, and then early science with a subset of the correlator in Q4 2009.

Software for Science Support Systems is also being developed to provide new software tools for EVLA users. An observation preparation tool is now in routine use for submitting VLA and GBT observing proposals. The observation preparation tool, the replacement for the VLA program JObserve, has been developed and is undergoing tests by the NRAO staff. An observation scheduling tool is being developed using lessons learned from dynamic scheduling of the VLA. Work on the archive access tool is currently focused on working with ALMA to finalize the binary data format and science data model.

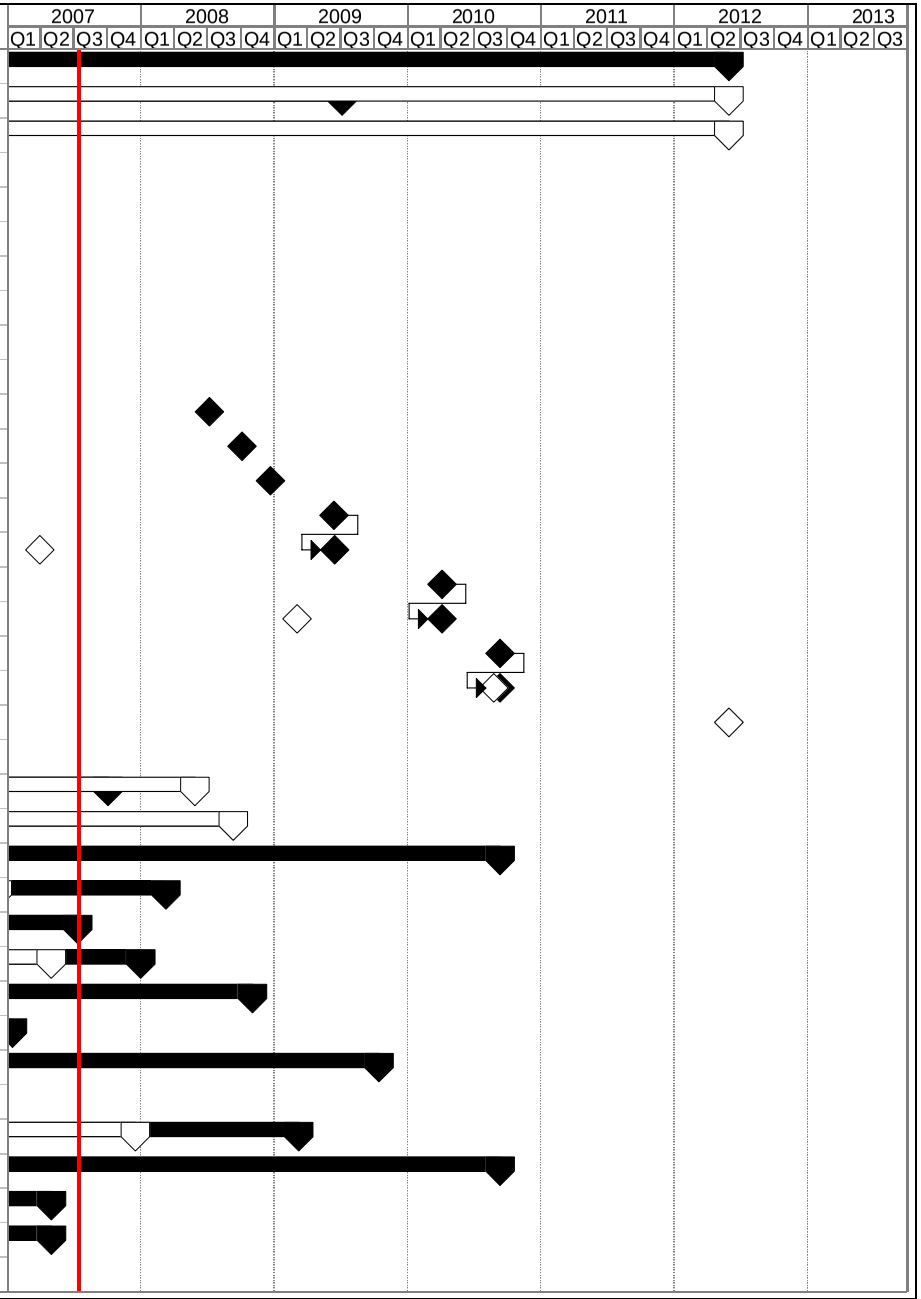
The performance of the project against its planned milestones is shown in the Project Milestone Summary below. The summary project schedule for all parts of the project is also listed below.

EVLA PROJECT MILESTONE SUMMARY



As of July 13, 2007

ID	WBS	Task Name	Start	Finish
1	**1**	**PROJECT MANAGEMENT**	**5/1/01**	**6/1/12**
1	**1.1**	**Management/Subsystem Engineering**	**5/1/01**	**7/6/09**
29	**1.1.40**	**Key Milestones**	**11/4/02**	**6/1/12**
30	1.1.40.1	Start installation of fiber optics on Wye	11/4/02	11/4/02
31	1.1.40.2	Start prototype system lab integration & test	1/15/03	1/15/03
32	1.1.40.3	Install prototype system on test antenna	4/14/03	4/14/03
33	1.1.40.4	Complete electronics CDRs	5/21/04	5/21/04
34	1.1.40.5	Start electronics production	4/5/04	4/5/04
35	1.1.40.6	Start retrofitting antennas w/ new system	10/5/04	10/5/04
36	1.1.40.7	Start observing in transition mode	8/1/06	8/1/06
37	1.1.40.8	Test prototype correlator on 3 or 4 antennas	7/9/08	7/9/08
38	1.1.40.9	Start outfitting new correlator room	10/6/08	10/6/08
39	1.1.40.10	Start tests of 1st correlator subset at VLA	12/23/08	12/23/08
40	11.2.16	Start shared-risk observing w/ correlator subset	6/15/09	6/15/09
41	1.1.40.11	1st shared risk science w/ new correlator subset	6/17/09	6/17/09
42	11.2.18	Acceptance of full WIDAR correlator	4/7/10	4/7/10
43	1.1.40.12	New correlator declared operational	4/7/10	4/7/10
44	2.30.17.14	28 antennas retrofitted to EVLA design	9/13/10	9/13/10
45	1.1.40.13	Last antenna retrofitted to EVLA design	9/13/10	9/13/10
46	1.1.40.14	Last receiver installed	6/1/12	6/1/12
47	**1.6**	**Project Book**	**6/4/01**	**3/1/02**
52	**1.10**	**Office Equipment & Supplies**	**6/4/01**	**10/4/07**
56	**1.20**	**Advisory Committee**	**10/15/01**	**9/11/08**
2	**2**	**SYSTEM INTEGRATION AND TESTING**	**5/1/01**	**9/13/10**
1	**2.1**	**Management/Subsystem Engineering**	**5/1/01**	**3/11/08**
20	**2.1.50**	**Test Antenna Plan**	**10/14/02**	**7/13/07**
54	**2.5**	**Test and Lab Equipment**	**5/1/01**	**1/2/08**
60	**2.10.1**	**Power Supply System**	**9/3/02**	**11/3/08**
88	**2.15**	**Site RFI characterization & Suppression**	**4/9/02**	**1/15/07**
97	**2.16**	**External RFI & Systems Immunity**	**4/22/02**	**10/16/09**
112	**2.20**	**Scientific Support**	**4/9/02**	**11/6/02**
115	**2.25**	**Modules Bins & Racks**	**2/1/02**	**3/10/09**
142	**2.30**	**Transition Planning**	**12/19/03**	**9/13/10**
3	**3**	**CIVIL CONSTRUCTION**	**6/4/01**	**5/2/07**
1	**3.1**	**Management/Subsystem Engineering**	**6/4/01**	**5/2/07**
8	**3.5**	**Fiber Optic Cable**	**1/2/02**	**2/6/04**



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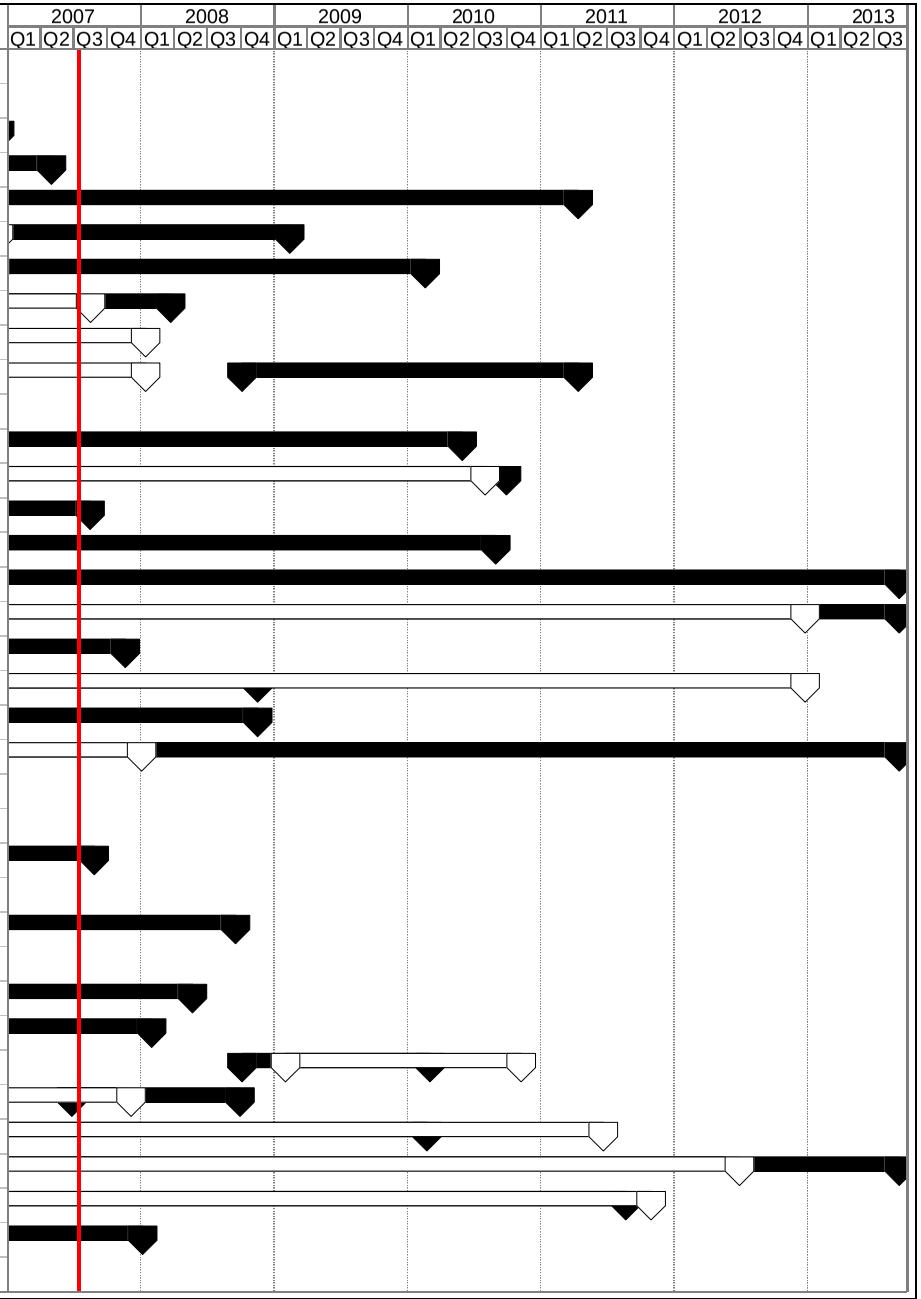
Date: 8/31/07

Milestone
Baseline Milestone
Summary
Baseline Summary
External Tasks

ID	WBS	Task Name	Start	Finish
21	3.5.5	Trench & install FO cable (200kft)	2/14/02	2/13/04
55	3.10	New Correlator Room	12/14/01	11/21/06
93	3.15	CB HVAC	8/25/03	12/12/06
104	3.20	Power Distribution	1/6/03	5/2/07
4	4	ANTENNAS	5/1/01	4/14/11
1	4.1	Management/Subsystem Engineering	6/4/01	2/13/09
53	4.2	Precision Machining	1/14/02	2/19/10
61	4.2.10.12	L-band horn production	12/7/04	3/24/08
67	4.2.10.14	C-band horn production	10/4/04	9/29/06
72	4.2.10.16	S-band horn production	10/6/08	4/14/11
78	4.5	Feed Cone Prototype	10/15/01	12/5/03
93	4.5.50	Feed Cone production	5/14/04	6/1/10
99	4.10	Antenna overhaul & EVLA conversion	4/9/03	9/30/10
127	4.15	Antenna Electrical & HVAC	7/7/03	8/16/07
134	4.20	Pointing Improvements	5/1/01	8/31/10
5	5	FRONT END AND FEED SYSTEM	6/4/01	9/10/13
1	5.1	Management/Subsystem Engineering	6/4/01	9/10/13
7	5.1.7	MMIC Development	4/2/02	11/20/07
41	5.2	Front-end Subsystems Engineering	11/18/02	11/17/08
42	5.2.1	Subsystems Engineering	11/18/02	11/17/08
277	5.2.2	Receiver Build & Installation	1/7/02	9/10/13
278	5.2.2.1	X-band Transition Rcvr	11/4/02	7/14/06
291	5.2.2.2	K-band Prototype Rcvr	11/4/02	9/16/05
309	5.2.2.3	Q-band Prototype Rcvr	10/11/02	8/28/07
329	5.2.2.4	L-band Transition Rcvr	3/4/03	3/31/05
352	5.2.2.5	C-band Prototype Rcvr	1/7/02	9/17/08
402	5.2.2.5.17	Start C-band Rcvr Production	12/30/04	3/31/06
407	5.2.2.6	L-band Prototype Rcvr	1/7/02	5/23/08
459	5.2.2.7	Ka-band Prototype Rcvr	10/22/02	2/1/08
500	5.2.2.8	Ku-band Prototype Rcvr	10/6/08	3/4/10
552	5.2.2.9	S-band Prototype Rcvr	6/28/07	9/30/08
603	5.2.2.10	X-Band Prototype Rcvr	7/1/02	2/24/10
662	5.2.4	Receiver Production	8/4/03	9/10/13
684	5.3	Feed Design, Prototype & Production	5/1/02	8/23/11
685	5.3.1	Design and Prototype	6/3/02	1/7/08
691	5.3.2	L-Band Feed Prototype	7/31/02	3/31/05



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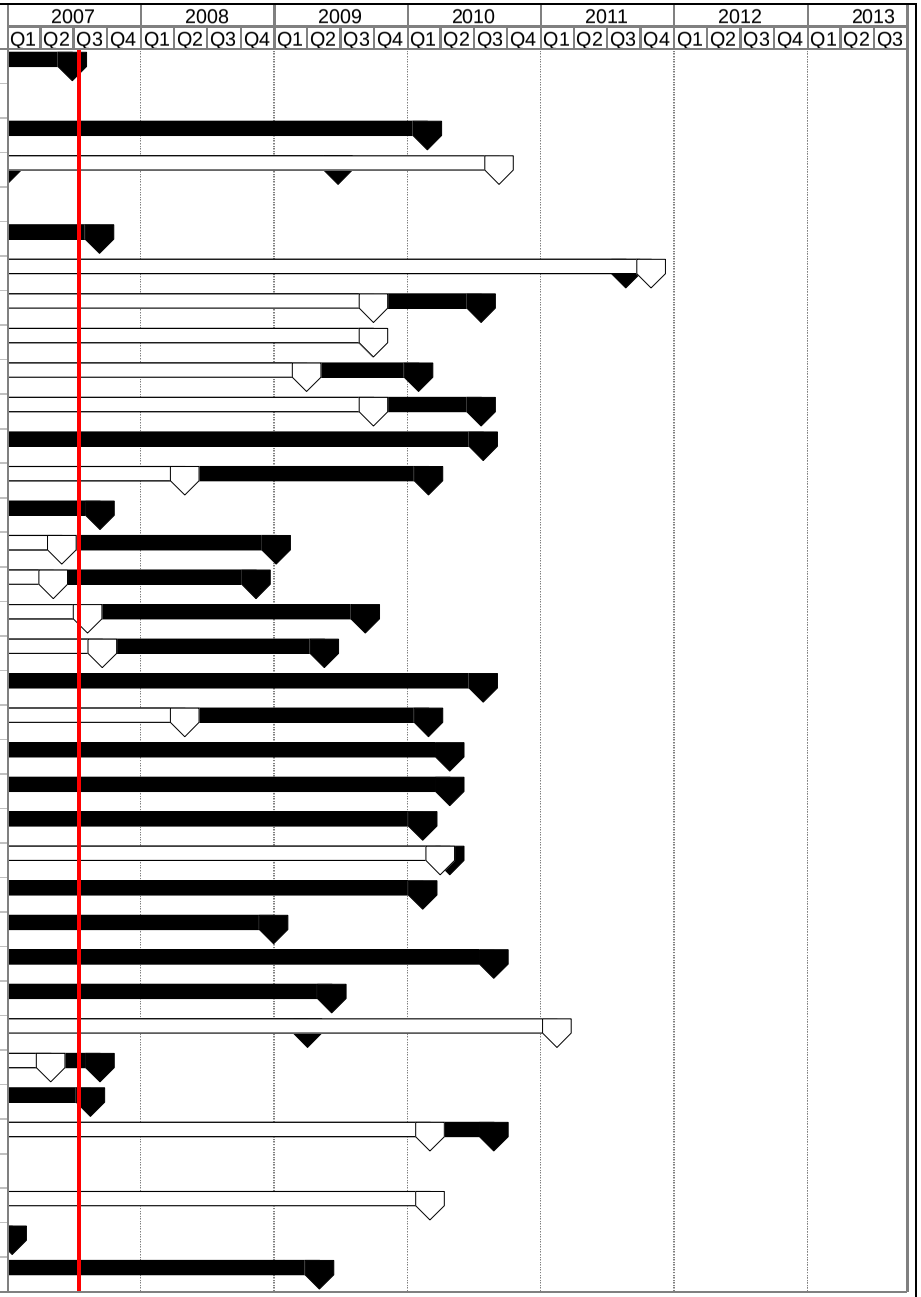
Milestone
Baseline Milestone
Summary
Baseline Summary
External Tasks

ID	WBS	Task Name	Start	Finish
706	**5.3.3**	**S-Band Feed Prototype**	**8/1/05**	**6/28/07**
715	**5.3.4**	**C-Band Feed Prototype**	**6/10/02**	**1/21/05**
727	**5.3.5**	**X-Band Feed Prototype**	**6/11/03**	**2/25/10**
740	**5.3.6**	**Ku-Band Feed Prototype**	**1/1/07**	**6/25/09**
751	**5.3.7**	**K-Band Feed Modification**	**5/1/02**	**6/25/03**
761	**5.3.8**	**Ka-Band Feed Prototype**	**6/11/03**	**9/11/07**
772	**5.3.9**	**Feed Production**	**7/1/02**	**8/23/11**
784	**5.4**	**Cryogenics**	**10/16/01**	**7/23/10**
789	**5.4.5**	**Vacuum Pump & Manifolds**	**6/11/03**	**9/29/09**
794	**5.4.6**	**Compressors & Helium Lines**	**3/4/03**	**2/1/10**
802	**5.4.7**	**Refrigerators**	**5/5/03**	**7/23/10**
6	**6**	**LO AND IF SYSTEM**	**6/4/01**	**7/29/10**
1	**6.1**	**Management/Subsystem Engineering**	**6/4/01**	**3/1/10**
12	**6.5**	**Master LO System**	**11/12/01**	**9/12/07**
63	**6.7**	**Central Antenna System**	**1/21/02**	**1/7/09**
107	**6.10**	**L301 12-20 GHz Synthesizer**	**8/27/01**	**11/13/08**
135	**6.15**	**L302 10.8-14.8 GHz synthesizer**	**10/29/01**	**9/8/09**
167	**6.20.1**	**Antenna Reference System**	**11/5/01**	**5/19/09**
210	**6.25**	**Antenna Outfitting**	**8/12/03**	**7/29/10**
224	**8.0**	**Band/LO Switches & Converters**	**11/19/01**	**3/1/10**
7	**7**	**FIBER OPTICS SYSTEM**	**6/4/01**	**4/27/10**
1	**7.1**	**Management/Subsystem Engineering**	**6/4/01**	**4/27/10**
14	**7.5**	**IF Fiber System**	**3/18/02**	**2/12/10**
83	**7.10**	**Fiber Infrastructure & Antennas**	**10/17/01**	**4/27/10**
180	**7.15**	**Samplers & MCB**	**3/1/02**	**2/12/10**
236	**7.20.10**	**LO Transmitter Module - L353**	**1/21/02**	**12/31/08**
8	**10**	**MONITOR AND CONTROL SYSTEM**	**5/1/01**	**8/27/10**
1	**10.1**	**Management/Subsystem Engineering**	**5/1/01**	**6/9/09**
17	**10.5**	**M&C Electronic Hardware**	**1/14/02**	**4/3/09**
107	**10.10**	**M&C Network Hardware/ Software**	**12/3/01**	**9/12/07**
121	**10.15**	**M&C Computing Systems, Hardware & Software**	**5/1/01**	**8/17/07**
148	**10.20**	**M&C EVLA Software**	**5/1/01**	**8/27/10**
149	**10.20.5**	**Stabilization of the VLA**	**5/1/01**	**6/10/04**
158	**10.20.10**	**Requirements (High Level, Raw)**	**10/5/01**	**6/26/02**
172	**10.20.15**	**High Level Sftwre Arch & Design**	**1/4/02**	**1/15/07**
190	**10.20.25**	**Mid-Level Analysis & Design**	**1/8/02**	**5/5/09**



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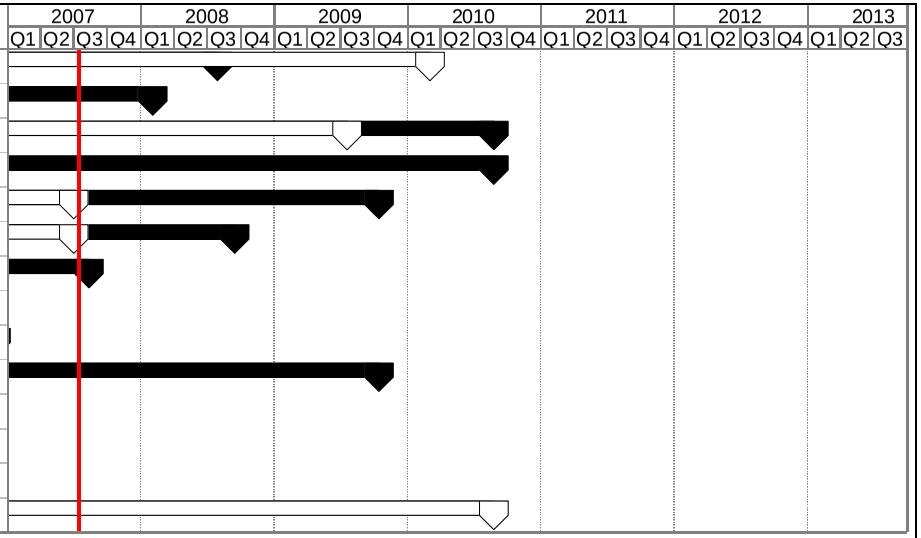
Milestone
Baseline Milestone
Summary
Baseline Summary
External Tasks

ID	WBS	Task Name	Start	Finish
233	**10.20.35**	**Detailed Design & Coding**	**11/2/04**	**7/30/08**
244	**10.20.35.3**	**Transition System, Retirement of Modcomps**	**8/13/03**	**2/4/08**
394	**10.20.35.35**	**Correlator, at VLA Site**	**10/5/01**	**8/27/10**
9	**11**	**DATA MANAGEMENT AND COMPUTING**	**10/1/01**	**8/27/10**
1	**11.1**	**e2e Project**	**10/1/01**	**10/15/09**
2	**11.1.1**	**Management and Project Book**	**12/3/01**	**9/16/08**
13	**11.1.2**	**Infrastructure**	**1/6/03**	**8/13/07**
16	**11.1.3**	**Proposal submission toolkit**	**9/16/02**	**5/11/05**
23	**11.1.7**	**Observation scheduling toolkit**	**3/31/03**	**12/1/06**
26	**11.1.8**	**Pipeline toolkit**	**4/1/02**	**10/15/09**
32	**11.1.10**	**Archive toolkit**	**10/1/01**	**3/24/05**
40	**11.1.11**	**Calibration toolkit**	**4/1/02**	**3/3/03**
46	**11.1.12**	**Master Address List**	**1/1/06**	**6/1/06**
52	**11.2**	**Transition Plan**	**3/21/05**	**8/27/10**



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Milestone
Baseline Milestone
Summary
Baseline Summary
External Tasks

14.4 Project Budget

Funding for the EVLA project comes from four sources: $58.7M from the National Science Foundation, $16.3M in manpower provided by the NRAO operations budget, approximately $17.0M funded by the Canadian government for the correlator, and $1.75M from the Mexican government (all figures are in FY 2006 US dollars).

In early 2005, the Mexican CONACyT issued a contract to NRAO for the construction of equipment that included complete sets of electronics for two EVLA antennas, seven K-band receivers, and five Q-band receivers. The equipment has been built and installed in the antennas. The total Mexican funding of $1.75M was received in November 2005. The involvement of the Mexican partner in the project is complete.

A major revision was made to the project budget in early FY 2005 to accommodate additional requirements that were not anticipated in the original EVLA proposal. Additional charges include compensation for an overrun in contributed effort from the operations budget ($800K), compensation for CASA personnel ($1.4M), and a charge for 10 FTE-years of E2E programming effort ($1M). All charges were taken from project contingency.

The overall budget status for the project as of July 19, 2007 is shown in the attached Project Cost Summary (PCS). This budget was determined from a recent re-estimate of the cost to complete the project. The PCS shows that with all known costs accounted for, there remains an unallocated contingency of $3.4 M, or about 14.6% of the cost to complete the project. The estimated cost to complete the project is based on work supported by the EVLA project budget and effort contributed from the NRAO operations budget, but does not include work on the correlator, which is supported by Canadian funds. Currently, the contingency is adequate to cover the weighted sum of risks (about $2.75M) identified in the project risk register. Should additional contingency funds be required, some receiver bands could be eliminated from the project’s scope, with a consequent loss of scientific capability.

PROJECT COST SUMMARY

All amounts are in $k dollars (FY2007)

WBS	Task Name	Actual FY2001	Actual FY2002	Actual FY2003	Actual FY2004	Actual FY2005	Actual FY2006	Budget FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	Totals
6.01	Project Management	**77.0**	**175.4**	**119.8**	**277.8**	**148.1**	**409.2**	**189.5**	232.8	348.5	388.9	49.5	0.0	2416
6.02	System Integration & Testing	**212.0**	**478.0**	**236.4**	**746.1**	**571.2**	**452.9**	**447.3**	182.2	234.3	0.0	0.0	0.0	3560
6.03	Civil Construction	**0.2**	**252.0**	**40.1**	**229.0**	**197.4**	**326.9**	**120.5**	25.0	0.0	0.0	0.0	0.0	1191
6.04	Antennas	**0.0**	**46.7**	**98.5**	**497.2**	**172.3**	**136.9**	**145.1**	129.4	112.6	34.2	0.0	0.0	1373
6.05	Front End Systems	**385.5**	**114.7**	**596.5**	**1312.7**	**1894.4**	**504.7**	**954.9**	1732.2	1259.9	931.2	494.4	169.7	10351
6.06	Local Oscillator System	**14.1**	**292.4**	**253.0**	**1188.4**	**357.9**	**307.1**	**393.3**	301.9	155.8	0.0	0.0	0.0	3264
6.07	Fiber Optic System	**4.7**	**603.8**	**735.5**	**1175.6**	**685.8**	**723.6**	**1334.4**	592.0	376.2	81.1	0.0	0.0	6313
6.08	Intermediate Frequency System	**0.0**	**105.5**	**327.5**	**215.4**	**819.9**	**353.3**	**566.9**	418.7	273.7	0.0	0.0	0.0	3081
6.09	Correlator	**277.0**	**336.5**	**192.7**	**759.8**	**883.1**	**3748.8**	**3979.0**	1539.0	117.5	0.0	0.0	0.0	11833
6.10	Monitor & Control System	**0.0**	**209.2**	**255.8**	**367.0**	**540.8**	**603.9**	**350.0**	322.0	275.7	214.6	15.0	0.0	3154
6.11	Data Management & Computing	**2.8**	**0.2**	**219.1**	**180.8**	**37.2**	**31.9**	**62.4**	158.4	300.0	400.0	0.0	0.0	1393
6.12	Education & Public Outreach	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	0.0	0.0	0.0	0.0	0.0	0
	M&S Total	**973**	**2614**	**3075**	**6950**	**6311**	**7599**	**8543**	5634	3454	2050	559	170	47930
	Travel	**7**	**93**	**72**	**76**	**109**	**78**	**75**	91	86	29	10	0	726
	Direct Labor	**126**	**1115**	**1689**	**2297**	**3066**	**3122**	**2649**	2213	1898	1008	130	0	19313
	NRAO Indirect Labor	**195**	**1549**	**2317**	**2186**	**2000**	**1820**	**2272**	2295	1883	673	421	292	17904
	NRAO Wages & Benefits	**321**	**2664**	**4006**	**4483**	**5066**	**4943**	**4921**	4509	3781	1680	551	292	37217
	Canadian Labor	**267**	**353**	**551**	**687**	**743**	**676**	**781**	801	424	0	0	0	5283
	Sub Total	**1569**	**5724**	**7704**	**12196**	**12229**	**13297**	**14320**	11034	7745	3759	1120	462	91156
	Contingency	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	514	2749	134	0	3397
	Redirected NRAO Effort	**-195**	**-1549**	**-2317**	**-2186**	**-2000**	**-1820**	**-2272**	-2295	-1883	-673	-421	-292	-17904
	Canadian Contribution	**-544**	**-690**	**-744**	**-1446**	**-1626**	**-4425**	**-4760**	-2340	-542	0	0	0	-17116
	Mexican Contribution						**-1747**							-1747
	EVLA Project Funds	**830**	**3486**	**4643**	**8563**	**8603**	**5305**	**7288**	6399	5835	5835	833	170	57786
	Carryover to next yr	**2170**	**3685**	**4363**	**5140**	**1880**	**2017**	**564**				170		
	Carryover from prior yr		**-2170**	**-3685**	**-4363**	**-5140**	**-1880**	**-2017**	-564				-170	
	NSF Funded	**3000**	**5000**	**5322**	**9340**	**5340**	**5441**	**5835**	5835	5835	5835	1003	0	57786
		FY2001	**FY2002**	**FY2003**	**FY2004**	**FY2005**	**FY2006**	**FY2007**	**FY2008**	**FY2009**	**FY2010**	**FY2011**	**FY2012**	**Totals**

CURRENT FTE TOTALS	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
EVLA Project	1.4	14.1	27.3	34.9	39.9	39.4	37.5	34.4	28.7	13.0	1.4	0.0	271.6
Off Budget (contributed effort)	3.1	19.8	28.8	33.0	32.3	28.3	34.4	31.5	24.6	9.3	5.5	3.6	254.6